

REMARKS

This Amendment is fully responsive to the non-final Office Action dated October 28, 2009, issued in connection with the above-identified application. A petition for a one-month extension of time accompanies this Amendment. Claims 28, 30-35 and 37-39 are pending in the present application. With this Amendment, claims 28, 30-35 and 37-39 have been canceled without prejudice or disclaimer to the subject matter therein; and claims 41-45 have been added. No new matter has been introduced by the new claims added. Favorable reconsideration is respectfully requested.

In the Office Action, claims 28 and 37 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lee et al. (U.S. Patent No. 5,921,095, hereafter “Lee”) in view of Viegas (U.S. Patent No. 6,062,030, hereafter “Viegas”), and further in view of Linstromberg (U.S. Patent No. 5,606,486, hereafter “Linstromberg”); and claims 30-35 and 38-40 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, Viegas and Linstromberg, and further in view of Valence et al. (U.S. Patent No. 5,600,966, hereafter “Valence”).

Claims 28, 30-35 and 37-39 have been canceled thereby rendering the above rejections to those claims moot. Additionally, the Applicants assert that the above cited prior art fails to disclose or suggest all the features recited in at least independent claim 41. Independent claim 41 recites the following features:

“[a] refrigerating storage cabinet comprising:

a heat insulating housing having a storage compartment;

a refrigerating unit that includes a compressor, a condenser, an expanding mechanism and an evaporator, said refrigerating unit having refrigerating performance conformable to a plurality of refrigerating specifications including a refrigerating specification for refrigeration and a refrigerating specification for freezing;

an identifying means configured to identify a refrigerating specification for said storage compartment and to provide an identification signal indicative of the identified refrigerating specification; and

a control unit dedicated for said refrigerating unit, said control unit being configured to select one of said plurality of refrigerating specifications based on said identification signal and

to control operation of said refrigerating unit in accordance with the selected one of said plurality of refrigerating specifications, wherein

said refrigerating unit with said control unit is detachably mounted to said heat insulating housing so as to be connected to said storage compartment;

said identifying means includes a detecting portion provided on one of said refrigerating unit and said heat insulating housing, and further includes a detected portion provided on another one of said heat insulating housing and said refrigerating unit;

said detecting portion and said detected portion are arranged close to each other so as to have an interaction therebetween, as a result of mounting of said refrigerating unit to said heat insulating housing;

said identifying means generates said identification signal based on said interaction between said detecting portion and said detected portion;

said control unit has a data storage that stores a plurality of refrigerating characteristics associated with said plurality of refrigerating specifications, each of said plurality of refrigerating characteristics being indicative of a time-varying change mode of dropping of a physical amount relevant to refrigeration, the physical amount including an internal temperature of said storage compartment; and

said control unit controls operation of said refrigerating unit so that the physical amount is reduced in accordance with one of said plurality of refrigeration characteristics that is associated with the selected one of said plurality of refrigerating specifications.”

The features noted above in independent claim 41 are fully supported by the Applicants’ disclosure (see e.g., ¶¶[0109] to ¶¶[0120]; and Figs. 12-17).

In the present invention (as recited in independent claim 41), a refrigerating unit having a compressor (e.g., inverter-driven compressor), a condenser, an expanding mechanism and an evaporator is provided with a control unit dedicated for the refrigerating unit. The refrigerating unit is constructed to meet a plurality of refrigerating specifications (e.g., refrigeration and freezing), while the control unit stores a plurality of refrigerating characteristics associated with the plurality of refrigerating specifications.

Additionally, the refrigerating unit with the control unit can be detachably mounted to a

heat insulating housing having a storage compartment, and thereby be connected to the storage compartment that is provided as a refrigerating compartment or a freezing compartment. An identifying means identifies the refrigerating specification for the storage compartment (e.g., refrigeration or freezing), and provides an identification signal indicative of the identified refrigerating specification. The control unit selects one of the refrigerating specifications based on the identification signal, and controls the operation of the refrigerating unit in accordance with the selected refrigerating specification.

Thus, in the present invention (as recited in independent claim 41) the refrigerating unit and the control unit can be provided as a common refrigerating unit with a common control unit, which can be used for a refrigerating compartment or a freezing compartment. More specifically, the control unit controls the operation of the refrigerating unit so that the physical amount (e.g., the internal temperature of the storage compartment) is reduced in accordance with a refrigeration characteristic (e.g., ideal curve) associated with the selected refrigerating specification. Therefore, the cooling of the storage compartment can be achieved in an efficient and sophisticated manner.

Additionally, the identifying means of the present invention (as recited in independent claim 41) includes a detecting portion and a detected portion provided on the refrigerating unit and the heat insulating housing, respectively, which are arranged close to each other so as to have an interaction therebetween (i.e., as a result of mounting of the refrigerating unit to the heat insulating housing). Thus, the identification of the refrigerating specification can be achieved by simple construction, and further it is automatically completed at the time of mounting of the refrigerating unit. Moreover, due to the automatic identification of the refrigerating specification, a wrong choice of the refrigerating specification can be prevented.

In the Office Action, the Examiner alleges that Lee discloses a refrigerating unit detachably mounted to a heat insulating housing. However, the Applicants assert that Lee fails to disclose or suggest all the features recited in independent claim 41 for at least the reasons noted below.

First, Lee discloses an expandable type refrigerator that includes a plurality of refrigerating units coupled together. Each refrigerating unit is originally provided with a heat

insulating housing (see e.g., Col. 4, lines 48-52). The heat insulating housings of the plurality of refrigerating units are coupled by clamps and clamp hangers, so as to form an expandable type refrigerator including the plurality of refrigerating units (see col. 5, lines 29-33). However, Lee fails to disclose a refrigerating unit that is detachably mounted to a heat insulating housing.

Second, the plurality of refrigerating units included in the expandable type refrigerator disclosed by Lee may include a refrigerating unit and a freezing unit. The refrigerating unit and the freezing unit in Lee have the same outer size, but differ in construction because they are constructed independently based on the required performance (see col. 4, lines 25-30). Thus, Lee fails to disclose or suggest a common refrigerating unit with a common control unit that can be used for refrigeration or freezing.

Third, the expandable type refrigerator disclosed by Lee includes only one micro-controller that controls the plurality of refrigerating units (see e.g., col. 7, lines 11-18). In contrast, according to the present invention (as recited in independent claim 41), a dedicated control unit is provided for a refrigerating unit.

Finally, Lee describes an identifying means, which identifies the refrigerating specifications for the respective refrigerating units included in the expandable type refrigerator and provides an identification signal indicative of the identified refrigerating specifications. However, the identifying means disclosed by Lee fails to include a detecting portion and a detected portion provided on the refrigerating unit and the heat insulating housing, respectively, which are arranged close to each other so as to have an interaction therebetween (i.e., as a result of mounting of the refrigerating unit to the heat insulating housing).

Thus, Lee fails to disclose or suggest the features recited in claim 41. Moreover, Viegas, Linstromberg, Stormo, Gerner and Valence fail to overcome the deficiencies noted above in Lee. Accordingly, no combination of Lee, Linstromberg, Stormo, Gerner and Valence would result in, or otherwise render obvious, independent claim 41. Additionally, no combination of Lee, Linstromberg, Stormo, Gerner and Valence would result in, or otherwise render obvious, claims 42-45 at least by virtue of their dependencies from independent claim 41.

In light of the above, the Applicants submit that all the pending claims are patentable over the prior art of record. The Applicants respectfully request that the Examiner withdraw the

rejections presented in the outstanding Office Action, and pass the present application to issue.
The Examiner is invited to contact the undersigned attorney by telephone to resolve any remaining issues.

Respectfully submitted,

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